Tuesday May 20, 2003

Weekly Energy Status Report

1. Northwest Power Pool Status (WA, OR, ID, MT, WY, UT, No. NV, BC, AB)

- Power Pool peak load (Tuesday, 5/19): 37,585 MW
- Reserve margins were within comfortable ranges for Northwest Power Pool utilities.

2. Electricity, Petroleum and Natural Gas Prices

• Weekly Range at Mid-C:	$29 – 38.6 per MWh, Ave. = $33.8
• Approximate change from previous week	$+0.6 per MWh
• "Normal" price range, before 5/00	$20-$40 per MWh
• Petroleum, West Texas Intermediate:	$28.83 per barrel (year ago: $24.47)
• Seattle gasoline price (5/19)	$1.62 per gallon (year ago $1.47)
• Natural gas, Sumas Hub:	$5.05 per million British Thermal Units (year ago $2.74)
• Approximate change from last week.	Oil: +1.2 per barrel; Nat. gas: +$0.43 MMBtu

3. California Electricity Situation

- CA ISO Alert Status
  - A stage 2 alert was declared on July 10, 2002.
  - Restricted maintenance warning declared, Sept. 23, 2001
  - Most recent rotating blackouts: Tuesday, May 8, 2001

- Energy News Headlines from California and the Nation
  - Natural gas prices are likely to cause rise in electricity prices (Fort Worth Star, May 18)
  - Bitter debate threatens salmon (Seattle PI, May 20)
  - Turkeys touted as fuel of the future (Associated Press, May 16)

4. River and Snowpack Information (Updated May 7, 2003)

- Observed April stream flow at The Dalles: 97.4% of average
- Observed April precipitation above the Dalles: 117% of average
- Observed 2003 snow pack as of April 7: 86% of average
- The latest forecast of Columbia River stream flows this January through July is 85.3 million acre feet, 79 percent of normal: National Weather Service Northwest River Forecast Center.

5. Energy Conservation Achievement (Updated Mar. 10, 2003)

- **State Agencies:** From January to December 2002 electrical usage was 7.6 % less and natural gas usage was 4.1% less compared to the same period in 2000.

6. Winter Load Loss/Reservoir Impacts/Fish (Updated April 21)

- Federal reservoir system storage: 46% full: Precipitation Oct. – to date, 93% of normal.
- Estimated winter (2002/03) load loss probability of 1%

7. Power Exchanged: (May 19, 2003)

- Average flow of power during the last 30 days

o California (exported to)	2,964 MW
o Canada (exported to)	601 MW
o Net power export:	3,565 MW

High Natural Gas Prices Are Likely to Cause Rise in Electricity Prices

Fort Worth Star-Telegram, by Dan Piller - *May 18, 2003*

High natural gas prices, like skillful thieves, are quietly robbing Texans of the lower electricity prices promised when the state's utility market was deregulated 17 months ago.

Because 70 percent of the electricity generated in Texas comes from turbines fired by natural gas, gas prices are expected to push electricity prices up as well. When and how much is still in question. But gas prices are up from $2.50 per million BTUs when the electricity market was opened to competition in January 2002, to more than $6 per million BTUs this week.

Worse, those prices aren't expected to fall any time soon, and low reserves of natural gas could threaten stable prices. The U.S. government predicts prices of $6.42 per million BTUs this summer during peak electricity demand and no less than $5 per million BTUs the remainder of 2003.

Additionally, low natural gas reserves nationally and in Texas give some the jitters, particularly after gas shortages in North Texas following a February ice storm, when some homes lost heat.

"We've never seen storage levels like this before," says Bill Geise, director of special projects for the Texas Railroad Commission. "It creates an obvious problem for anybody who needs to buy natural gas."

That domino could tilt toward Texas' electricity markets.

Texas Public Utilities Commission Chairwoman Rebecca Klein says she is "very worried" about Texas' heavy dependence on natural gas for electricity generation, and others have said that it may be time to revisit nuclear power generation.

The run-up in natural gas prices is a bump in what appeared to be a smooth, long-term plan by Texas to expand its electricity-generating base on a platform of cheap, natural gas.

In the 1990s, when the state went on a binge building 69 new generating plants, natural gas was thought to be the silver bullet.

Not only was it less expensive, but it had other advantages as well.

Coal has been de-emphasized nationally as a generating fuel because it causes air pollution. Wind power was the delight of the environmental crowd, but Texas' nascent wind energy windmill farms in West Texas still generate only 1 percent of the state's electricity supply. That figure is expected to rise to about 10 percent by the end of the decade.

And the advance of nuclear energy was effectively stalled more than two decades ago by the 1979 Three Mile Island meltdown, and by depictions of danger such as those in the 1978 movie The China Syndrome. But, although no prominent national politician has yet stepped forward to promote nuclear power, there are signs that the natural gas price problem may be easing fears about nuclear power.

On April 10, the Senate Energy and Natural Resources Committee approved provisions in a bill that would allow the secretary of energy to provide loan guarantees and agreements by large electricity users to purchase the power from new, advanced-design nuclear power plants.

Those who promote nuclear power may find their arguments buttressed if electricity prices continue to rise. Since deregulation began in Texas early last year, TXU Energy has twice successfully petitioned the Texas PUC for permission to raise the "Price to Beat" from the 8.4

cents per kilowatt hour price of Jan. 1, 2002, to 9.7 cents today. TXU isn't closing the door on another increase if natural gas prices stay where they are.

Also, 17 months ago, several of the new electricity providers were offering residential electricity priced below 7.5 cents per kilowatt hour for at least 1,500 kilowatt hours of usage monthly. Last week, the lowest prices offered in the North Texas region of Fort Worth and Dallas was Entergy Solutions of New Orleans, at 8.6 cents per kilowatt hour, and Houston-based Gexa, at 8.5 cents per kilowatt hour.

Natural gas has become more expensive for the old Economics 101 reason; it is scarcer, and demand for it has risen. Production has declined the past two years, and underground storage inventories shrank after the coldest winter in years.

Though declining crude oil production can be supplemented by imports from the Middle East, natural gas can't feasibly be imported from other energy-rich parts of the world. The United States is still mostly dependent upon gas drilled within its own borders and supplemented by gas from Canada and Mexico.

Those who needed to buy wholesale electricity on Texas' ERCOT grid during the first half of May learned the new facts of life the hard way. Texas' spot wholesale electricity prices exceeded $80 per megawatt hour, and the $50 price late last week was still the highest of the 17 U.S. regional wholesale markets The sudden costliness of Texas' wholesale electricity is a stunning reversal for a region long accustomed to some of the cheapest electricity in the United States.

Although less than 10 percent of Texas' wholesale electricity needs are purchased on the spot market, those prices are ominous with gas in low supply.

Most big suppliers, like TXU and Reliant Resources in Houston, buy through stable long-term contracts. So the short-term spikes in gas prices won't necessarily result in immediate rate increases for most consumers and businesses.

But the upward trend line means that Texans probably won't realize the fulfillment of then-Gov. George W. Bush's words in 1999 when he signed Texas' deregulation bill. The governor said, "this legislation will result in cheaper electricity prices for Texans."

Four years later, Chief Executive Tim Rogers of Cirro Energy of Plano, one of Texas' new electricity marketers, said that "high natural gas prices will make it tough to bring electricity rates down."

Rogers says Cirro has had to hold off making some longer-term contract offers to bigger business customers "until the market settles down."

When such settling down may happen is an open question.

PUC Chairwoman Klein's worries were enhanced last winter, when colder-than-normal weather nationwide and throughout Texas caused utilities to dig deeply into their stored reserves to provide enough gas to keep customers warm. Texas saw its level of stored natural gas fall from about 330 billion cubic feet in September to the bare minimum of about 100 billion cubic feet at the end of March, according to Texas Railroad Commission figures.

Nationally, the U.S. Department of Energy reports that storage has dropped from 1.6 trillion cubic feet at the beginning of winter to 750 billion cubic feet at the end of the season, the lowest storage level since the federal government started keeping records in 1976.

Because Texas wants at least 300 billion cubic feet of gas in storage by the start of each winter, and Washington desires at least the five-year historic average of 1.3 trillion cubic feet of gas stored by the time frost comes, utilities will need to buy a lot of gas in the coming weeks just to replenish their storage caverns.

Erle Nye, chairman of TXU Corp., said in early May that "we are replenishing our storage reservoirs on schedule." TXU stores gas in several large depleted reservoirs north of Denton.

But Nye and other electricity generators don't have a leisurely six months before winter to replenish their stores. Texas' peak electricity loads come during the hottest weather, from mid-June through September. At that point, TXU and other electricity generators will need all the gas they can get their hands on to keep their generators operating at full capacity to power air conditioners.

But gas prices are up 50 percent from last summer, when they hovered between $3.50 per million BTUs to $4.

"The natural gas market has changed in recent years," the PUC's Klein said. "Until recently, the cold weather in the north was the big driver. Now there is high demand for natural gas in summer because of the need to provide power for air conditioning. Gas is now a year-round market."

Every seller of retail electricity in the Texas market, be it a big generator like TXU, a new provider like Cirro or even wind-power marketer Green Mountain Energy of Austin, has to pay a commodity price for electricity that is now based on natural gas.

"We have to buy electricity in the same wholesale market as everybody else, and when the price of natural gas goes up, our costs go up, too," said John Savage, Green Mountain's Texas regional president.

A solution to the problem is, of course, the traditional Texas method of improving supply through the drill bit. There are indications that high prices are causing the natural gas exploration and drilling industry to rouse itself to the task.

A week ago, the Baker Hughes rig count for North America passed 1,000 drilling rigs for the first time in three years. The rig count was as low as 499 in 1999, when natural gas prices dipped below $2 per million BTUs.

Cloyce Talbott, chief executive officer of Patterson-UTI of Snyder, the nation's second-largest operator of drilling rigs, said that in the first quarter of this year his company's rig usage was up from 140 last year to 176. Even more significant, drilling-rig operations measured by hourly usage were up by 50 percent over last year.

Fadel Gheit, analyst with Fahnestock & Co. in New York, says the encouraging numbers about drilling indicate that doomsday talk about a coming natural gas shortage may be overdone.

"This runs in cycles," Gheit said. "If there is a shortage, then the drilling industry will go out and find and drill more gas. The greater supply will ease prices."

But longtime oil and gas explorer Roy Pitcock of Graham said, "There is a time lag from when you get a lease and start drilling to when the gas is actually on the market and running through the pipelines.

It will be a while before we catch up."

Bitter debate threatens salmon

SEATTLE POST-INTELLIGENCER EDITORIAL BOARD

The future of the Northwest is based on this region's abundant energy supply, low-cost renewable hydroelectricity from dams.

Or, the future of the Northwest is based on this region's once abundant natural resources, such as salmon and steelhead.

Two competing visions of this region's direction.

Sometimes, when we're fortunate, advocates for either direction find enough common ground to keep us moving forward together.

Then there are times -- like now -- when the harshness of the debate makes consensus seem impossible.

Earlier this month a federal judge said that dam removal ought to be considered because salmon restoration efforts have been too timid. The reasoning is clear: If the dams are to stay, then every effort, and enough money, has to be directed toward salmon recovery.

Meanwhile, in Washington, Idaho Sen. Larry Craig says it's time to "rebalance" the debate about license renewals for the dams by concentrating on the issues that matter: power, irrigation, flood control and recreational uses. The problem, Craig says, is that environmental groups and tribes can go to court for relief seeking "stricter, more expensive conditions" than what federal regulations require.

Making the dams the only issue for salmon recovery won't bring about consensus -- it limits the debate to either dams or not.

But at the same time, pretending that significant money and resources are not important just makes the dam removal debate inevitable.

There ought to be room for fish and power. But that goes beyond one limited vision of the future.

Turkeys touted as future of fuel

Company comes up with process to turn waste products into energy source

BILL BERGSTROM THE ASSOCIATED PRESS

The versatile turkey has been chopped, pressed and processed into foods as diverse as burgers and bacon. Now a Long Island entrepreneur wants to put a turkey in your tank.

Brian Appel, chief executive of Changing World Technologies, has developed a process for cooking and pressurizing waste turkey parts -- and lots of other things -- into a golden liquid that can be refined into heating oil, diesel fuel or gasoline.

Appel's process, called thermal depolymerization, is essentially an accelerated version of "the oldest of technologies, one that the earth uses when it puts vegetables and dinosaurs under pressure" to form petroleum deposits, Woolsey said.

A $20 million facility at ConAgra's Butterball turkey plant in Carthage, Mo., is undergoing testing and expected to start using the technique by the end of May, said Terry Adams, chief technology officer for Changing World Technologies.

The plant ultimately will grind up, heat, pressurize and process 200 tons a day of leftover turkey innards, bones, feathers, fats and grease -- enough to produce 600 barrels of oil daily, officials say.

The process will digest just about anything: garbage, medical waste, hog manure, old tires.

Robert Brown, an engineering professor at the Center for Sustainable Environmental Technologies at Iowa State University, said scientists have known for years how to use thermal depolymerization to convert waste into energy.

The problem, he said, is cost. Biological materials contain water that must be removed before they can be turned into fuel. Brown said biomatter contains oxygen, making it less explosive than fossil fuels.

"I'd be surprised if they can do it at a good price," he said.

Appel acknowledged his process isn't yet competitive.

The plant spends $15 a barrel to turn turkey waste into oil, compared with about $13 a barrel for small exploration and production companies and $5 for a major oil company, he said.